

WHAT IS CLAIMED IS

1. A process for preparing a rubber sheet having a thickness of at most 20 mm, which comprises:
- 5 extruding a rubber composition containing 2 to 50 parts by weight of short fiber having an average fiber diameter of 1 to 100  $\mu\text{m}$  and an average length of 0.1 to 5 mm based on 100 parts by weight of diene rubber in a tube shape, thereby orienting said short fiber in the circumferential direction of said tube
- 10 shaped rubber;
- wherein said tube shaped rubber sheet is further cut at one point in sidewall in the extrusion direction to obtain a rubber sheet having a complex elastic modulus  $E_a$  in the extrusion direction and complex elastic modulus  $E_b$  in the 90° direction from the extrusion direction
- 15 measured at 25°C which fulfill the following equation

$$1.1 \leq E_b/E_a.$$

2. A process for preparing a tread, which comprises the steps
- 20 of:
- cutting said rubber sheet obtained by the process of Claim 1 parallel to the extrusion direction and rotating each piece 90° and laminating.

- 25 3. A process for preparing a tread, which comprises the steps of:
- extruding a rubber composition for a tread containing short fiber or

plate-like material of a Moh's hardness of 3 to 7 into a sheet,  
cutting said sheet perpendicularly to the extrusion direction and  
rotating each piece of said rubber sheet 90° and laminating,  
wherein when measured at 25°C said tread has a complex elastic  
5 modulus E1 in the tread thickness direction, and said sheet has a  
complex elastic modulus E $\alpha$  in the extrusion direction and a complex  
elastic modulus E $\beta$  in a 90° direction from the extrusion direction, when  
said rubber composition is made into 2 mm sheets with a roller and said  
moduli fulfill the following equation,

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$$60 \leq (E1-E\beta)/(E\alpha-E\beta) \times 100 \leq 100$$

and the tread has a tread rubber hardness measured at -10°C of 45 to  
70 degrees.

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4. A process for preparing a tread, which comprises the steps  
of:

extruding a rubber composition for a tread containing short fiber or  
plate-like material of a Moh's hardness of 3 to 7 into a tube,  
20 forming a sheet by cutting one point in the sidewall of said tube shaped  
rubber sheet in the extrusion direction,  
cutting said sheet parallel to the extrusion direction and  
rotating each piece of said rubber sheet 90° and laminating,  
wherein when measured at 25°C said tread has a complex elastic  
25 modulus E1 in the tread thickness direction, and said sheet has a  
complex elastic modulus E $\alpha$  in the extrusion direction and a complex  
elastic modulus E $\beta$  in a 90° direction from the extrusion direction, when

said rubber composition is made into 2 mm sheets with a roller and said moduli fulfill the following equation,

$$60 \leq (E1-E\beta)/(E\alpha-E\beta) \times 100 \leq 100$$

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and the tread has a tread rubber hardness measured at  $-10^{\circ}\text{C}$  of 45 to 70 degrees.

5. A studless tire having a tread comprising a rubber sheet  
10 obtained by the process of Claim 1.

6. A studless tire having a tread obtained by the process of  
Claim 2.

15 7. A studless tire having a tread obtained by the process of  
Claim 3.

8. A studless tire having a tread obtained by the process of  
Claim 4.

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9. A studless tire having a tread comprising diene rubber and  
short fiber or plate-like material of a Moh's hardness of 3 to 7 dispersed  
in said diene rubber so as to be oriented in the tread thickness direction,  
wherein when measured at  $25^{\circ}\text{C}$  said tread has a complex elastic  
25 modulus  $E1$  in the tread thickness direction, and said sheet has a  
complex elastic modulus  $E\alpha$  in the extrusion direction and a complex  
elastic modulus  $E\beta$  in a  $90^{\circ}$  direction from the extrusion direction, when

said rubber composition is made into 2 mm sheets with a roller and said moduli fulfill the following equation,

$$60 \leq (E_1 - E_\beta) / (E_\alpha - E_\beta) \times 100 \leq 100$$

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and the tread has a tread rubber hardness measured at -10°C of 45 to 70 degrees.

10. The studless tire of Claim 9, wherein said short fiber or  
10 plate-like material is short fiber having an average fiber diameter of 1 to 100  $\mu\text{m}$  and average length of 0.1 to 5 mm or plate-like material having an average thickness of 1 to 90  $\mu\text{m}$  and average length of 0.1 to 5 mm.